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# Circular Fashion Through TAWM (Textile and Apparel Industry Waste Management)

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**ABSTRACT**

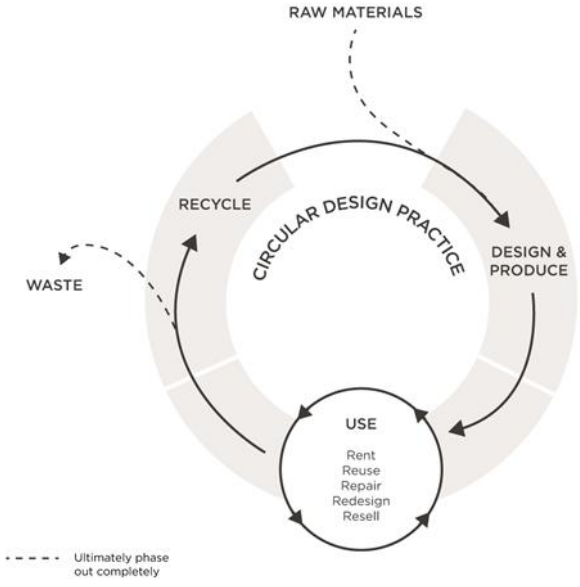
The textiles and apparel industry in India has strengths across the entire value chain from fiber, yarn, fabric to apparel. Due to the introduction of fast fashion the mass production of garments is done frequently which results in wastage of yarn and textile. The lifespan of clothes has decreased as they are discarded because they are no longer fashionable. All these wastes such as overstock and deadstock fabrics from mills and garment industry, are reusable.This study aims to encourage the concept of circular fashion and sustainability.The objective of this study is to reduce industry wastage by converting them into various items. This research has been done in order to minimize landfilling of textile and apparel industry waste.

**Keywords:**Circular fashion, Waste management, Sustainability.

## 1. INTRODUCTION

### 1.1 What is Circular Fashion?

Basically, circular fashion is reusing the resources the fashion industry already has. Circular fashion starts at the very beginning of a garment's lifecycle in the design stage.The purpose of circular fashion is to minimize waste in production but to also promote the idea of buying less. Because at the core, buying less is equal to less materials in landfills.



As defined by Brismar, the concept 'circular fashion' is based on the main principles of circular economy and sustainable development. It relates to the fashion industry in a wider sense, that is, not only to fashion products but also to apparel, sportswear, outdoor wear, footwear, home textiles, and similar products. Circular fashion concerns the entire life cycle of a product, from design and sourcing, to production, transportation, storage, marketing, and sale, as well as the user phase and the product's end of life. From a theoretical perspective, Brismar's invention and definition of circular fashion was inspired by the ideas of circular economy, primarily the framework presented by the Ellen MacArthur Foundation.

### 1.2 What is Textile and Apparel Waste?

Wastage or waste can be defined as such kind of materials that don't come into use after the end of the process or the basic use of a product. It is one kind of worthless or useless or defective material.So, textile wastage can be defined as the material that becomes unusable or worthless after the end of the production process of any textile product. Wastage produces in every stage of the textile manufacturing process such as spinning, weaving, knitting, dyeing, finishing and clothing.

Textile wastage is a great threat for any textile industry and the environment as well. When fibre bales are processed through the blow room section in a spinning mill a huge amount of cotton wastage produces. So, it is an economic threat. In a dyeing factory ton of fabric dyed and tons of wastewater is produced which is a great threat to the environment.

Textile waste is generated at the manufacturer's end and also at the consumer's end. It has no advantage but disadvantages both economically and environmentally. The manufacturers can put emphasis on new technologies to reduce wastages and the consumers should be more conscious about it.

## 2. LITERATURE REVIEW

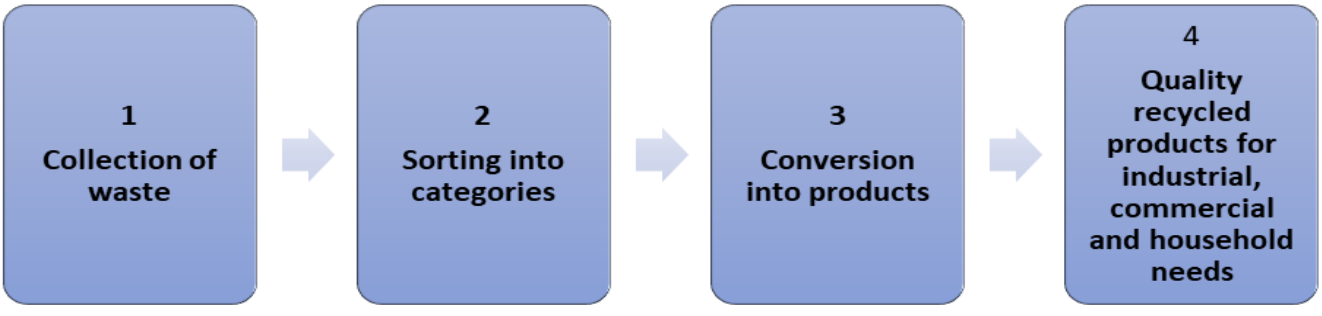
As per the reports of Resources, Conservation and Recycling, the textile waste in India comprises of 3% by weight of the household waste. Through recyclers the systematic statistical data of apparel waste collection breakdown. The municipal solid waste (MSW) collection options are available in India. So, one of the major challenges is to determine the market information on the amount of discarded textile collection by recyclers and MSW collection system. Globally, around 87% of discarded textiles ended up in landfill, of which more than 90% are reusable and recyclable. Recycling textile waste to other value-added products is economically feasible.

The growth of textile industry is high due to the ever-increasing usage of the textile products. The textile processing includes various stages involving the use of numerous chemicals. The textile industry produces wastes in the form of wastewater effluent. The wastewater effluent contains solvents which are mostly organic along with used oils and coloring agents. In addition, solid wastes like fabrics soaked with oil and grease are also produced. These wastes from textile industry are toxic and hazardous to the environment. In order to reduce the harmful impact of textile waste and to create a safe environment, these wastes are to be utilized in sustainable applications.

Following the oil industry, fashion manufacturing is the second largest polluting industry of the agricultural land leading to various unfavorable impacts on the environment. Sustainable fashion, also lightly known as eco-fashion, is a part of the rising design reality and trend. The aim is to build an approach that can bear the unlimited load of human impact on the environment and social obligation. Zero waste needs that human activity to only use nature's assets at a rate that can be restored naturally. Hypothetically, the long-term result of environmental degradation is the incapability to withstand human life. Such dilapidation on a comprehensive scale could entail extinction for the human race. Fashion is a complex business involving long and diverse supply chains of production, textile manufacture, raw material, garment construction, transportation, retail, consumption, and eventually disposal of clothes. The carbon footprint of this industry is tremendous. Obvious pollutants like pesticides that meet the common eye are used in producing natural fabrics. The hazardous dyes are used largely in manufacturing textiles discarding huge amounts of waste.

## 3. METHODOLOGY

The objective of the project is to reduce industry wastage by converting them into various items. The project also aims to create recyclable output with waste materials through molding.This will also help to merchandise recycled products which will contribute to circular fashion.This research has formulated a set of certain steps to minimize textile and apparel industry wastage.



The various steps involved in the process are:

(a) Collection of textile and apparel industry waste.
(b) Sorting the waste into different categories.
(c) Converting the waste into different products.
(d) Getting quality recycled products for industrial, commercial, and household needs.

## 4. CONCLUSION

- Approximately 0.3% of industry waste will be reduced per metric ton.
- The quality recycled products will be produced for industrial needs, commercial and household use.

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